



State of Utah  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

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November 20, 2001

TO: Internal File

FROM:  Priscilla W. Burton, Reclamation Specialist/Soils, and Project Team Lead

RE: Revisions to the Crandall Canyon Reclamation Plan, Plateau Mining Corporation, Willow Creek Mine, C/007/004-SR01A-1

**SUMMARY:**

Plateau Mining Corporation has revised Exhibit 20, the reclamation plan for the Crandall Canyon area of the Willow Creek Mine. The revision incorporates a change of post-mining land use from grazing and wildlife to recreational use for a portion of the disturbed area in Crandall Canyon. This use will be supported by a primary road in Crandall Canyon.

As a result of the retention of the primary road, changes were made in plans for backfilling and grading, slope reconstruction and channel design during reclamation.

**TECHNICAL ANALYSIS:**

**GENERAL CONTENTS**

**IDENTIFICATION OF INTERESTS**

Regulatory Reference: 30 CFR 773.22; 30 CFR 778.13; R645-301-112

**Analysis:**

Volume 1, Section 2.1.2 contains information relative to R645-301-112. Figure 2.1-1, dated March 28, 2000, outlines the location of Plateau Mining Corporation (PMC) within the RAG American Coal Company corporate structure. Figure 2.1-1 contains the names of those operations affiliated with the Applicant. Plateau Mining Corporation is a wholly owned subsidiary of RAG American Coal Company which in turn is a wholly owned subsidiary of RAG

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American Coal Holding, Inc. All the corporations mentioned above were incorporated under the laws of the State of Delaware. Ownership and control information is listed in Exhibit 1, Volume 4 as required under R645-112.300.

Plateau Mining Corporation as the Applicant and Operator, is authorized to do business in the State of Utah, Colorado and Delaware. Section 2.1.2.1 lists the employer I.D. number, address and telephone number of PMC. PMC's resident agent is CT Corporation System; 50 West Broadway; Salt Lake City, Utah 84101. PMC will be responsible for the payment of Abandoned Mine fees. The main MSHA number will be 42-02113; some facilities will have separate MSHA numbers.

The land within the disturbed area boundary is owned by Plateau Mining Company.

The owners of the coal to be mined within the permit area are shown on the Regional Coal Ownership Map, (Map 2), and are listed in Section 2.1.2.4 as Blackhawk Coal Co., Carbon County, USDI - Bureau of Land Management, and Utah DNR. The same four entities own the mineral rights contiguous to the property.

The owners of the surface to be affected by operations are shown on Map 1, Regional Surface Ownership Map. (According to Map1 and to the text, Harry C. and Alda M. Edwards are adjacent landowners, but their address is not available from Carbon County records.) Appendix 3.7V of the application indicates that, within the permit area, 800 acres of land is owned by C-Canyon, L.C. represented by Mr. Reed L. Martineau, Esq. Map 1 and the text on page 2.1-4 have been updated with this submittal to include C-Canyon, L.C. Section 3.7-4(7) of the application refers to that recent transaction and explains that the landowner is seeking the postmining land use change from undeveloped land to recreational land.

**Findings:**

The information provided meets the minimum Identification of Interest requirements of the Regulations.

**VIOLATION INFORMATION**

Regulatory Reference: 30 CFR 773.15(b); 30 CFR 773.23; 30 CFR 778.14; R645-300-132; R645-301-113

**Analysis:**

Compliance information is presented in Section 2.1.4 and Exhibit 2 (Volume 8). Neither the Applicant nor any affiliate, subsidiary or persons controlled by or under common control with the Applicant has had a federal or state mining permit suspended or revoked in the five

years prior to the date of the application, and these entities have not forfeited a mining bond or similar security deposited in lieu of bond.

R645-301-113.300 requires a list of all unabated cessation orders and air and water quality violation notices received by the Applicant or any operation owned or controlled by either the Applicant or any person that owns or controls the Applicant. Exhibit 2 (dated October 1999) provides such information. There have been no notices of violations issued to Plateau Mining Corporation since NOV 98-46-3-2 was issued on October 19, 1998.

**Findings:**

Information in the proposal is adequate to meet the requirements of this section of the regulations.

## RECLAMATION PLAN

### POSTMINING LAND USES

Regulatory Reference: 30 CFR Sec. 784.15, 784.200, 785.16, 817.133; R645-301-412, -301-413, -301-414, -302-270, -302-271, -302-272, -302-273, -302-274, -302-275.

**Analysis:**

According to the approved mining and reclamation plan, the premining land use for Crandall Canyon is undeveloped land. As defined by R645-100 under *Land Use*, "undeveloped land is land that is undeveloped or if previously developed, land that has been allowed to return naturally to an undeveloped state or has been allowed to return to forest through natural succession." Undeveloped land implies the land will have no structures or facilities and that it is not actively managed for wildlife or grazing.

This submittal proposes a change of land use from undeveloped land to recreational use for that portion of the disturbed area belonging to C-Canyon, L.C. as shown on Map 1 (Section 3.7-4(7) and 3.7-5(2) of the application).

The Regulations define recreational use as "Land used for public or private leisure-time activities, including developed recreation facilities such as parks, camps, and amusement areas, as well as areas for less intensive uses such as hiking, canoeing, and other undeveloped recreational uses."

A change of post-mining land use requires that the proposal is treated as a significant revision. Public notification of the land use change was advertised in the Sun Advocate for four

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consecutive issues from March 1 through March 22, 2001 (see Exhibit 3, Affidavit of Publication).

Land within the disturbed area has been deeded to C-Canyon, L.C., a Utah limited company whose representative is Reed L. Martineau (see Quit Claim Deed dated October 18, 2001. Both the land ownership information in the mining and reclamation plan (page 2.1-4) and Map 1, Willow Creek Mine Regional Surface Ownership Map have been revised accordingly.

The Permittee is proposing to leave the road through the canyon to provide unimpeded access as desired by the land owner C-Canyon, L.C. (See Appendix 3.7V letters from Mr. Martineau, dated October 19, 2000 and June 4, 2001, describing the need of the landowner for access to the property.) Mr. Martineau's plans for future development also require that a permanent road will remain in the canyon in order that governmental approval for improvements can be obtained.

In evaluating the requirements of R645-301-413.300, higher and better use, the Permittee notes that the presence of the road will allow development of the landowner's parcel of ground. The retention of the road is a pre-requisite to achieving the recreational landuse. Because the postmining land use has not previously been either recreation or wildlife habitat, no woody plant density standard was established. Now, however, there are woody plant density standards that will enhance the absorptive capacity of the watershed and improve the diversity of the site overall.

As shown on the Kyune, Utah quadrangle map, the Price Canyon Recreation Area sits one thousand feet above the floor of Crandall Canyon. The Price Canyon Recreation Area includes campgrounds and a picnic area. The zoning of the Price Recreation Area is presently Critical Environment Zone 1 (CE 1) due to its location above 7,000 feet in elevation. Crandall Canyon is presently Mining and Grazing 1 (MG 1). Under the current zones of MG 1 and CE 1, caretaker dwellings are allowed. There is another zone possible for the lower reaches of the canyon (below 7,000' elevation); that is Critical Environmental Zone 2 (CE 2). The zone of CE 2 further allows manufactured homes and single family dwellings and conditionally allows caretaker dwellings and camp site facilities.<sup>1</sup>

**Findings:**

The Division finds that the postmining land use change to recreational use for that portion of the disturbed area owned by C-Canyon, L.C., as requested by the landowner, can only be achieved with retention of the road. The Division also finds that the recreational land use is not impractical or unreasonable and is consistent with adjacent land use plans. Further, the Division finds that the use does not present any hazard to the public health and safety or

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<sup>1</sup> Information on zoning obtained through a telephone conversation on November 20, 2001 between Gayla Williams, Deputy Zoning Administrator for Carbon County, and Priscilla Burton.

contribute to water pollution or diminution. State and local land use plans and programs have been considered when making this determination.

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**PROTECTION OF FISH, WILDLIFE, AND RELATED ENVIRONMENTAL VALUES**

Regulatory Reference: 30 CFR Sec. 817.97; R645-301-333, -301-342, -301-358.

**Analysis:**

The only specific wildlife habitat enhancement measure included in the reclamation plan is to retain any power poles that are being used by raptors.

The applicant is required to use the best technology currently available to protect and enhance wildlife habitat, and there may be additional feasible alternatives that could be used. Although the postmining land use would not be wildlife habitat, wildlife would continue to use the area, and practical habitat enhancement is required for any land use, even including industrial sites. The plant species in the seed and planting mixture meet the requirements of R645-301-342.200 and should lead to good quality wildlife habitat.

The channel is designed as a rip-rapped, meandering channel. Soil would be placed among the riprap to help facilitate revegetation. This is an intermittent stream where water flows infrequently and with great variability. To enhance the riparian habitat, the applicant might be able to use willow wattles on the outside of some of the meanders or could possibly install in-stream structures, such as large rocks or logs. These types of features would create more places to capture and slow the gully washers that course through the stream channel.

It appears there is a seep or spring in the vicinity of pond 14, but the applicant does not show plans to develop this spring. Developing the spring, however, would probably require a water right, and it may be just as well to allow the water to flow down the channel, where it would support vegetation in the stream channel and still be available for wildlife.

**Findings:**

The information provided is adequate for the Protection of Fish Wildlife and Related Environmental Values as required by the Regulations.

## MINE OPENINGS

Regulatory Reference: 30 CFR Sec. 817.13, 817.14, 817.15; R645-301-513, -301-529, -301-551, -301-631, -301-748, -301-765, -301-748.

### Analysis:

As of October 23, 1991, Shafts No.1 and No.2 were sealed with six inch thick concrete slabs. A two inch PVC vent pipe was installed through the seal of each shaft. The sealing plan is detailed in Appendix 3.7M. The seals were intended to be temporary. Although the Applicant asserts that the present seals appear to be in compliance with MSHA guidelines 30 CFR 75.1711-1, there will be further sealing work done during Phase I of the reclamation as described in Section 3.7-5(3)(2). If the mine is not reactivated and the existing seals remain, then the permanent seals will be placed directly over the existing seals.

The 1996 Technical Analysis of the reclamation practices in Crandall Canyon resulted in the following declaration from the technical staff,

*"The Division has approved the concept of sealing the ventilation raises with concrete plugs. Plugs may fail over time. Before the raises are sealed the Division will examine other methods of shaft sealing. If more effective methods exist then the Division will require the Operator to adopt the best shaft sealing method available.*

*The Division has approved the temporary seal of mine entrances.*

### Findings:

*The Division approves the concept of sealing the ventilation raises with plugs. Since shaft sealing technology is currently developing it is possible that improved methods will be available when the area is reclaimed. During final reclamation the Division will evaluate currently available shaft sealing methods. If there are methods superior to plugs the Division will require the Operator to use the best available shaft sealing technique."*

(O:007038.wil/FINAL/WILLWCK.FTA)

Mr. Stan Perks, Mining Engineer with the Bureau of Land Management, has recently, verbally expressed concerns about the methods described in the reclamation plan for shaft closure and ventilation and brought this issue to the fore. As a result, the Division is initiating a separate review of this reclamation technique in cooperation with the BLM.

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**Findings:**

The Permittee is required to modify the reclamation plans for the ventilation shafts in Crandall Canyon based upon the best available technology.

**REVEGETATION**

Regulatory Reference: 30 CFR Sec. 785.18, 817.111, 817.113, 817.114, 817.116; R645-301-244, -301-353, -301-354, -301-355, -301-356, -302-280, -302-281, -302-282, -302-283, -302-284.

**Analysis:**

**Timing**

The current mining and reclamation plan says seeding and planting will be done in the fall whenever possible but that it may sometimes be necessary to seed or plant in the spring. The applicant has had good success with planting seedlings in the fall, and this is considered the normal time to seed. Seeding in the spring increases the risk that vegetation will take much longer to establish, so although the mining and reclamation plan complies with regulatory requirements, the applicant should try to avoid spring seeding.

**Mulching and other soil stabilizing practices.**

Before redistributing topsoil, the applicant will rip the underlying spoil to a depth of 18 to 24 inches. Topsoil will be redistributed on only part of the disturbed area; substitute topsoil will be used in the rest of the area. The applicant will spread alfalfa hay on the soil and substitute soil at a rate of about two tons per acre, and this will be mixed into the soil through gouging. The alfalfa serves as a soil amendment. No fertilizer will be added because fertilizer tends to increase the number of weeds.

Following soil surface preparation, the area will be broadcast seeded followed by application of between one and one and one-half tons per acre of straw and 500 pounds per acre of wood fiber hydromulch. The hydromulch is to anchor the straw. The gouging and mulching methods keep water from running off thereby promoting vegetation establishment and growth.

The seed mix consists of fifteen native species. The applicant has elected to use only one seed mix rather than having different seed mixes for different aspects or for the riparian area. The mix has species adapted to all the conditions at the mine from south-facing slopes to riparian areas to north-facing slopes.

The planting mix includes two species of conifers, bigtooth maple, and cottonwoods. The conifers will be planted near the main channel (CCRD-11) and in the side canyon with CCRD-3. The planting rates for the conifers were designed to not create a climax, closed forest type of community. The maples and cottonwoods will be planted about every twenty feet along the channel.

The revegetation methods proposed are the best of which the Division is aware and should lead to good revegetation success.

### **Standards for success**

General revegetation requirements are in R645-301-353, and the success standards specifically required for areas with grazing and recreation land uses are in R645-301-356.210 and R645-301-356.230. Revegetation success for these areas is judged on the basis of ground cover, productivity, and woody plant density. A standard for woody plant density was not previously established, since it was not required for the undeveloped postmining land use. Section 3.7-5(3)(9) now includes woody plant density standards that were set in consultation with the Division of Wildlife Resources. The standards are discussed below.

According to the original vegetation survey, five vegetation types were identified in the area that was proposed to be disturbed. These are conifer, riparian, grass/sage, mixed brush, and previously disturbed. According to the mining and reclamation plan and the application, the disturbed area would be compared with riparian and conifer reference areas in Crandall Canyon and with a grass sage reference area above the clean coal stockpile at the Willow Creek Preparation Plant.

Ground cover and productivity standards are relatively straightforward. The reclaimed areas can be compared statistically with the appropriate reference areas. This can be done combining the information currently in the mining and reclamation plan and the performance standards.

Diversity is judged using the Motyka Index as discussed in Chapter 9 of Exhibit 19. The standard is that the similarity between the reference and reclaimed areas must be at least the lower of 70% or the average similarity between each vegetation sample in the reference area. The Division has previously approved this standard and found it acceptable.

When the vegetation measurements were taken in 1981, the conifer reference area had 5244 shrubs and 389 trees per acre for a total of 5633 woody plants per acre. Most of these were Oregon grape, a very small shrub that often grows in the conifer understory. Considering the number of trees to be planted, the number of trees and shrubs in the reference area, and the desired vegetation community, the success standard has been set at 800 woody plants per acre (Section 3.7-5(3)(9)). This will be composed of no more than 250 conifers per acre, and the rest

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will be shrubs or other kinds of trees. If there were more conifers than this, it would tend to lead to a closed stand with little understory.

The riparian area only had 223 woody plants per acre in 1981. While grasses and trees tend to dominate this area with few shrubs, the Division and Wildlife Resources decided to set the standard at 400 per acre.

Most of the site will be compared with the grass/sage reference area where woody plant density was measured at 981 per acre. According to the Division of Wildlife Resources, the area is in elk winter range, but deer do not winter in this area. At this elevation, deer instead prefer more exposed sites where forage is more easily available.

Elk are primarily grazers although they will eat some shrubs and mushrooms. For this reason and because Crandall Canyon does not contain winter habitat for mule deer, shrubs are not as important in this area as they would be in deer winter range. The main part of Crandall Canyon can meet the postmining land use even if it contains only a limited number of shrubs. However, the Division expects that many of the grasses that establish in this area to be tall grasses, such as basin wild rye and slender wheatgrass. Basin wild rye is a preferred species for elk because of its height and because it cures well and maintains its nutritional value into the winter.

Since shrubs are not as critical for meeting the postmining land use, the standards have been set relatively low. They are 200 per acre for the leach field area and 800 per acre elsewhere. The leach field area is next to pinyon/juniper, riparian, and conifer areas, so leaving it primarily as a grassland will provide more diversity and greater forage for wildlife, as well as accomodating the desires of the landowner (App 3.7V, letter dated June 4, 2001). The rest of the area is more open, so establishing shrubs for both cover and forage is more desirable.

As noted in Section 3.7-5(3)(9), the Permittee will meet diversity requirements for each of the reclaimed areas.

**Findings:**

Information in the proposal is adequate to meet the Revegetation requirements of the Regulations

**RECOMMENDATIONS:**

The change in postmining land use is recommended for approval. The Division should initiate a review of the best technology available for shaft closures.